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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/519,875	03/06/2000	Johannes C. M. Jasper	PM-257643-P-0128.010-US	8797

7590 12/30/2002

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EXAMINER

KIM, PETER B

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 12/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/519,875

Applicant(s)

JASPER ET AL.

Examiner

Peter B. Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 27-75 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 49-75 is/are allowed.
- 6) ☒ Claim(s) 1-3, 10, 11, 33-35, 43 and 44 is/are rejected.
- 7) ☒ Claim(s) 4-9, 12, 27-32, 36-42 and 45-48 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 08, 2002 has been entered.

Applicant's arguments filed on November 08, 2002 have been fully considered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 2, 10, 11, 33-35, 43 and 44 are rejected under 35 U.S.C. 102(b) as being anticipated by Izumi (JP61196532).

Izumi discloses in the abstract and Figures 1-3, a lithographic projection apparatus comprising a first object table (10), a second object table (7) holding a substrate (6), a projection system (9), a positioning system arranged to move the second object table between an exposure station and an exposure station (Fig. 1), a height mapping system with at least one sensor (3a) to

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measure positions of a plurality of points on a surface of substrate in a first direction and to measure a position of the physical reference surface in the same direction, and creating a height map relative to the reference surface, a position measuring system located at the exposure station (3b), and a position controller (8a) constructed and arranged to control a position of the second object table during exposure. Izumi also disclose tilting of the second object table (Fig. 2) and the position measuring system is constructed and arranged to measure the position of the physical reference surface relative to the focal plane (Fig. 3). Izumi also discloses a plurality of spaced-apart physical reference surfaces (22).

Claim 33 is rejected under 35 U.S.C. 102(e) as being anticipated by Loopstra (6,208,407).

Loopstra discloses in the abstract and Figures 1-7, a lithographic projection apparatus with a radiation system (LA), a first object table (MT) with a mask and a second object table (WT) with a substrate and a reference surface, a projection system for imaging an irradiated portion of the mask onto a substrate, a positioning system (Figure 3) a height mapping system with at least one sensor (150, 160) to measure positions of a plurality of points on a surface of substrate in a first direction and to measure a position of the physical reference surface in the same direction, and creating a height map relative to the reference surface (Fig. 2-8), a position measuring system and a controller. Loopstra also discloses

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izumi in view of Loopstra.

Izumi discloses the claimed invention as discussed above. However, Izumi does not disclose a level sensor constructed and arranged to simultaneously measure positions in the first direction. Loopstra discloses in col. 14, line 53 – col. 15, line 7, a level sensor that simultaneously measures position in the first direction. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide the level sensor of Loopstra to the apparatus of Izumi to measure the position of the surface of the substrate since both inventions make such measurements and it would be obvious to use different type of sensor.

Allowable Subject Matter

Claims 49-75 are allowed.

Claims 4-9, 12, 27-32, 36-42, and 45-48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

None of the prior art of record teaches or discloses measuring positions of a plurality of points on a surface of the substrate in a first direction substantially perpendicular to the surface and to measure at a substantially same position in a plane substantially perpendicular to the first direction positions of the second object table in the first direction.

Response to Arguments

In response to applicant's arguments Claim 1 is rejected with the Izumi reference. However, Claim 33 is rejected with both Izumi and Loopstra reference because Claim 33, unlike

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Claim 1, does not claim using only one sensor to measure positions of the points on a surface of the substrate and the reference surface.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Kim whose telephone number is (703) 305-0105. The examiner can normally be reached on Monday-Thursday from 6:30 AM to 4:00 PM. The examiner can also be reached on alternate Fridays during the same hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams, can be reached on (703) 308-2847. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.



Peter B. Kim
Patent Examiner
December 27, 2002